

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A process for the production of a safety helmet which comprises an energy dispersive polymer composite sandwich structure, comprising the steps of;
 - a) introducing into a mould a first layer comprising at least one piece of fabric, a second layer comprising a pre-formed energy dispersive material comprising a pre-formed foam, a third layer comprising at least one piece of fabric and a curable polymer material in contact with at least said first and third layers, and
 - b) curing the polymer material such that first and third fibre reinforced polymer layers are formed encapsulating the second layer, and consolidating the layers such that the three layers act as one material.
2. (Original) A process as claimed in claim 1 wherein the first layer and some curable polymer material are introduced into the mould prior to introduction of the second layer and the third layer and some curable polymer material are introduced into the mould subsequent to the introduction of the second layer.
3. (Original) A process as claimed in claim 1 wherein the first layer of fabric is bonded to the second layer prior to introduction into the mould.
4. (Previously Presented) A process as claimed in claim 3 wherein some curable polymer material is introduced into the mould prior to introduction of the bonded first and second layers.

5. (Previously Presented) A process as claimed in Claim 3, wherein the third layer of fabric is bonded to the second layer prior to introduction to the mould.

6. (Previously Presented) A process as claimed in claim 5 wherein at least some curable polymer material is applied to the third layer after it is bonded to the second layer.

7. (Previously Presented) A process as claimed in claim 6 wherein the curable polymer material applied to the third layer is applied after the third layer has been introduced into the mould.

8. (Previously Presented) A process according to claim 1 wherein each of the first and third layers comprise in the range of from 1 to 4 sheets of fabric.

9.-17. (Cancelled)

18. (Previously Presented) A process according to claim 1 comprising attaching a fourth shock attenuating layer to the energy dispersive polymer composite sandwich structure product.

19. (Previously Presented) A process according to claim 18, wherein the fourth shock attenuating layer comprises at least one energy dispersive material.

20.-24. (Cancelled)

25. (Previously Presented) A process according claim 1, comprising fixing a comfort liner to the third layer.

26.-28. (Cancelled)

29. (Previously Presented) A process according to claim 1 wherein the second layer comprising the pre-formed foam is formed from at least three interconnecting sections.

30. (Original) A process according to claim 29 wherein the interconnecting sections comprise a means of locking engagement.

31. (Original) A process according to claim 30 wherein the means of locking engagement is provided by chamfered abutting edges or are joined by means of a protrusion and co-operative recessed portion.

32. (Cancelled)

33. (Previously Presented) A process according to claim 1 wherein the energy dispersive material is polystyrene foam and the method further includes the step of applying a barrier between the polystyrene foam and curable resin to prevent chemical reaction.

34. (Original) A process according to claim 33 wherein the barrier contains a spectroscopically active compound to monitor the application.

35. (Previously Presented) A process according to claim 33 wherein the barrier is applied to the foam by means of spraying, dipping or brushing.

36. (Previously Presented) A process according to claim 35, wherein the barrier is uniform and impervious and is formed from an epoxy adhesive.

37.-42. (Cancelled)

43. (Previously Presented) A process according to claim 18, comprising fixing a fifth comfort layer to the fourth layer.

44. (New) A process for the production of a safety helmet which comprises an energy dispersive polymer composite sandwich structure, comprising the steps of;

a) introducing into a mould a first layer comprising at least one piece of fabric, a second layer comprising a pre-formed energy dispersive material comprising a pre-shaped foam, a third layer comprising at least one piece of fabric and a curable polymer material in contact with at least said first and third layers, and

b) curing the polymer material such that first and third fibre reinforced polymer layers are formed encapsulating the second layer, and consolidating the layers such that the three layers act as one material.

45. (New) A process for the production of a safety helmet which comprises an energy dispersive polymer composite sandwich structure, comprising the steps of;

a) introducing into a mould a first layer comprising at least one piece of fabric, a second layer comprising a pre-formed energy dispersive material manufactured to the substantially final or final shape of the desired helmet shape and comprising a pre-formed foam, a third layer comprising at least one piece of fabric and a curable polymer material in contact with at least said first and third layers, and

b) curing the polymer material such that first and third fibre reinforced polymer layers are formed encapsulating the second layer, and consolidating the layers such that the three layers act as one material.